FIRE MISSION PROCESSING

OBJECTIVES

- Process adjust Fire Missions using the Grid, Shift, and Polar Methods.
- Process Fire For Effect Fire Missions using the Grid, Shift, and Polar Methods.
- Examine the Intervention Point Window.
  - Tac Solution Tab
  - Attack Options Tab
  - Cannon Tech Solution Tab
  - Aimpoints Tab
- Receive and process a fire mission received digitally.

THE FIRE MISSION PROCESS

- AFATDS is designed to receive a fire mission through the use of digital messages from the Sensor (Observer or Radar) to the Shooter (Cannons, Rockets, Mortars, etc.)

- AFATDS also has the capability to input a fire mission from the keyboard as if the mission was received from an observer who has not digital device.

VOICE CALL FOR FIRE

A or B de FO21 AF Grid 645 169, 122 mm Artillery Battery I/O, VT I/E

- To process this mission in the AFATDS:

  Mission Processing> Initiate Fire Mission

- The **Initiate Fire Mission Window** opens

VOICE CALL FOR FIRE (GRID METHOD)

CALL FOR FIRE: A or B de FO21 AF Grid 645 169, 122 mm Artillery Battery I/O, VT I/E

- Observer: **FO21 Co A 1st Bn 2nd Mar**
- Mission Type: **Adjust Fire**
- Location: **645 169 Alt 900** (from the map)
- Category: **Fire Support**
- Type: **Arty, Medium SP (121-160 mm)**
- Strength: **6**

Voice Call for Fire (Grid Method)

- At this point a **Fire Order** must be given by the Fire Direction Officer**.**

  FIRE ORDER: Btry, #1, 1 Rd, HE A/W, Chg 6, Q, 3 Rds VT I/E

- This Fire Order is now entered into AFATDS through the following fields:

VOICE CALL FOR FIRE (GRID METHOD)

FIRE ORDER: Btry, #1, **1 Rd, HE A/W**, Chg 6, **Q**, 3 Rds VT I/E

- Click 1 on the **Munitions Tab**
  - Adjusting Shell: **HE**
  - Model: **M107DC**
  - Lot: **A**
  - Fuze: **PD**
  - Model: **M557**
  - Lot: **P**

VOICE CALL FOR FIRE (GRID METHOD)

FIRE ORDER: Btry, #1, 1 Rd, **HE A**/W, Chg 6, **Q**, **3 Rds VT I/E**

- FFE 1 Shell: **HE**
- Model: **M107DC**
- Lot: **A**
- Volleys: **3**
- Fuze: **VT**
- Model: **M732**
- Lot: **V**

VOICE CALL FOR FIRE (GRID METHOD)

FIRE ORDER: Btry, #1, 1 Rd, HE A/**W, Chg 6**, Q, 3 Rds VT I/E

- Propellant Model: **M4A2**
- Lot: **W**
- Charge: **6**

VOICE CALL FOR FIRE (GRID METHOD)

FIRE ORDER: Btry, **#1**, 1 Rd, HE A/W, Chg 6, Q, 3 Rds VT I/E

- Click 1 on **More Mission Data**
- In Adjusting Units Field click 1 on **<ADD>**
- Select **GDU GUN 1**
- **<OK>**
- All Fire Order information has now been entered **<Analyze Target>**

VOICE CALL FOR FIRE (GRID METHOD)

- AFATDS now processes the information from the Call for Fire and Fire Order, and generates a Fire Mission.
- The **IP** (Intervention Point) **Icon** on the AFATDS Current Bar darkens.
- Click 1 on the **IP ICON**
- This will open the Intervention window

THE INTERVENTION WINDOW

- The Intervention Window has four tabs available across the top for viewing;
  - **Tac Solution** displays by default
  - **Attack Options**
  - **Cannon Tech Solution**
  - **Aimpoints**

  We will now look at these tabs.

Tac Solution

- In this window you will find some very important information regarding:

  Target information
  - Target Number – if not entered uses next # from AFATDS
  - Target Type – from Fire Request
  - Mission Type – from Fire Request
  - NLT – from target decay time guidance
  - Value – prioritizes the mission
  - Precedence – from FR or TMM guidance (can be changed)
  - View Target Information – displays the Basic Target window
  - Filter Data – displays results of filter checks

ATTACK OPTIONS

Color codes for each FS System

- Green: Can generate a capable solution within commander's guidance.
- Yellow: Can generate a capable solution within commander's guidance but requires coordinatio
- Red: Weapons are available but cannot determi a solution.
- Black: No weapons are available.

RECOMMENDATION

- Provides the preferred solution.
- Selection is controlled by rules established in Attack Options Ranking to view select:
  - **Mission Processing> Preferences**.
    - Shows the order that the computer will select munitions to be fired.
    - Can be manually changed.

INTERVENTION BUTTONS

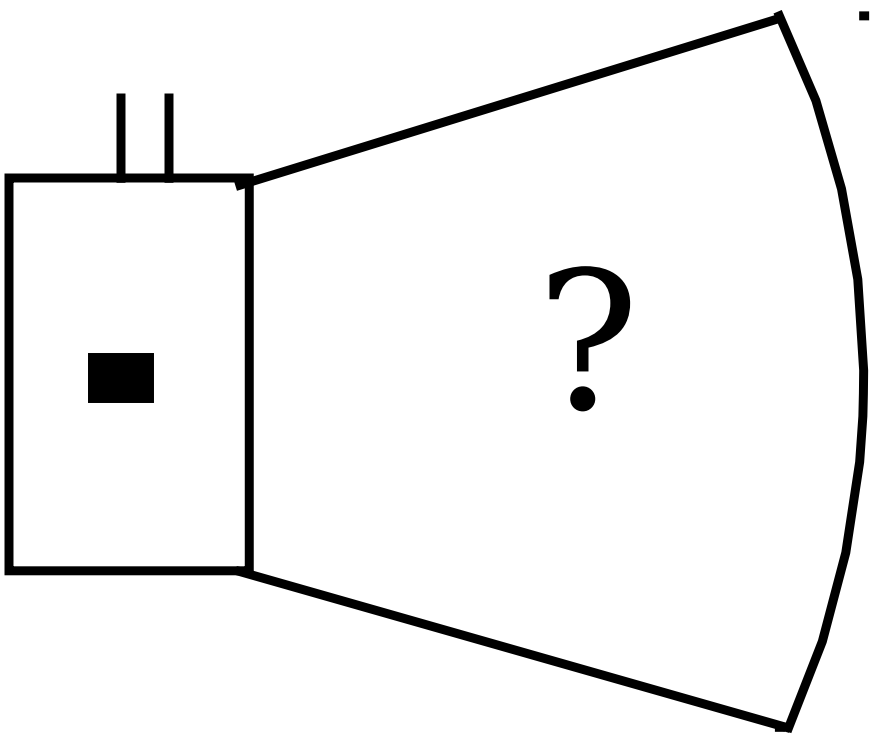
Accept Recommendation	Executes the recommendation
Send Selected	Executes a selected option
Recalculate	Re-displays the IFM window for reprocessing the mission.
Deny	Denies the mission to the request
Unsupportable	Sends the mission to the comman
Cancel	Closes the IP and the mission is sa

ATTACK OPTIONS

Select the **[Attack Options]** tab

- Shows the following:
  - Meets Mission cutoff
  - Number of Active Missions
  - Number of missions with lower priority
  - Options for each the fire support system
  - Munitions: Both adjusting and FFE Shell and Fuze
  - Unit Data: Range, Reaction Time, Angle T, Operational Status

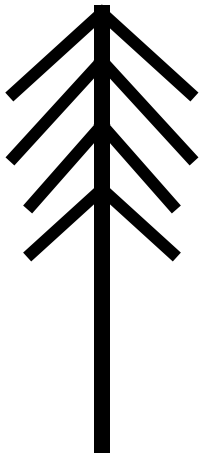
CAPABILITY ICONS



Y = Inside the range

N = Outside the rang

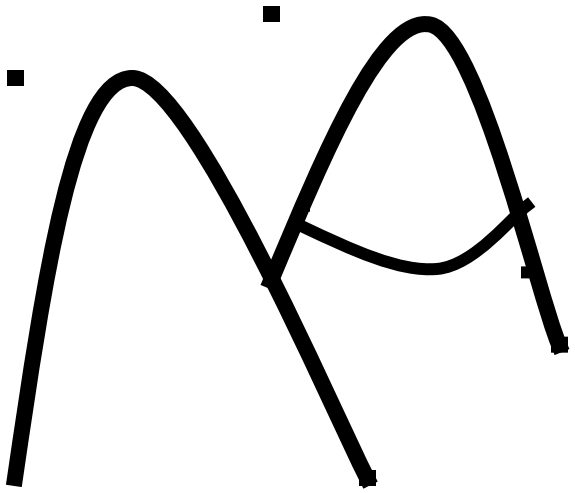
CAPABILITY ICONS



Y = Near Mask stored in unit's weapon data is violated

N = No near mask Violation

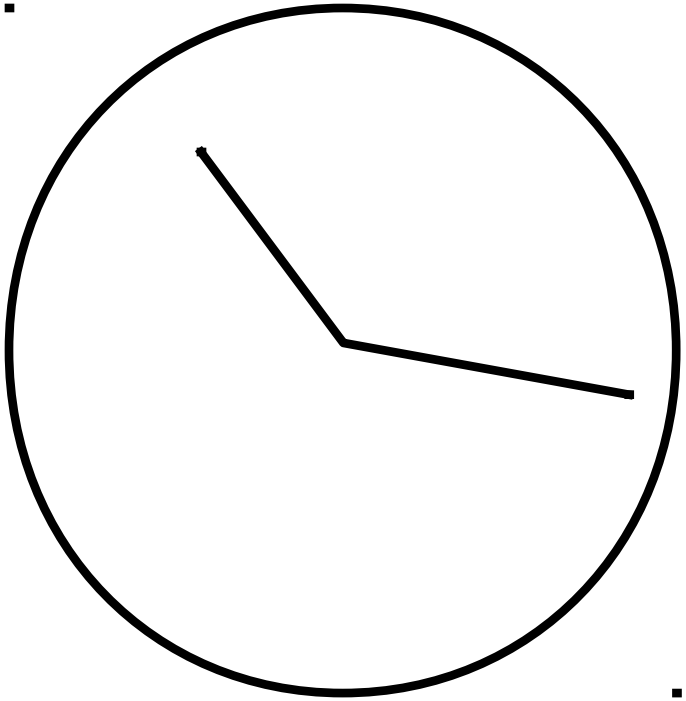
CAPABILITY ICONS



Y = A down range mask geometry is violated

N = No violation

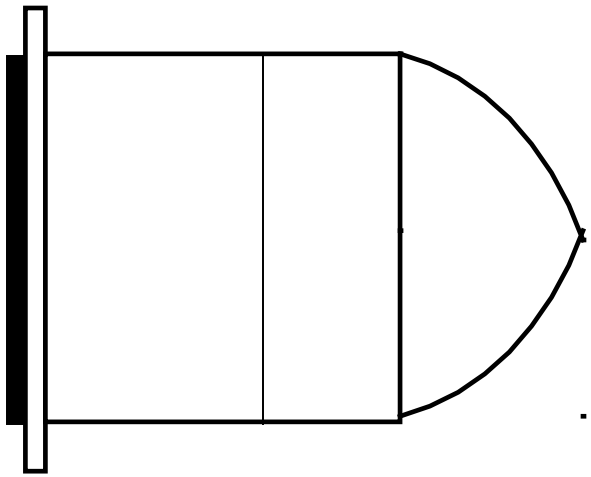
CAPABILITY ICONS



Y = Can engage before NLT expires.

N = Time incapable.
- Higher priority missions
- No decay time
- Time drastically off

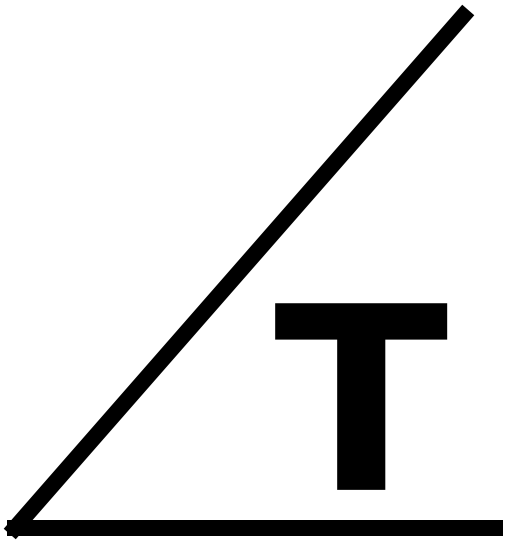
CAPABILITY ICONS



Y = Ammunition for the option
is available.

N = Ammunition not available.
Massing prohibited.
Ammunition can not range.

CAPABILITY ICONS



Applies to 155mm cannon
Copperhead munitions

Y = Capable

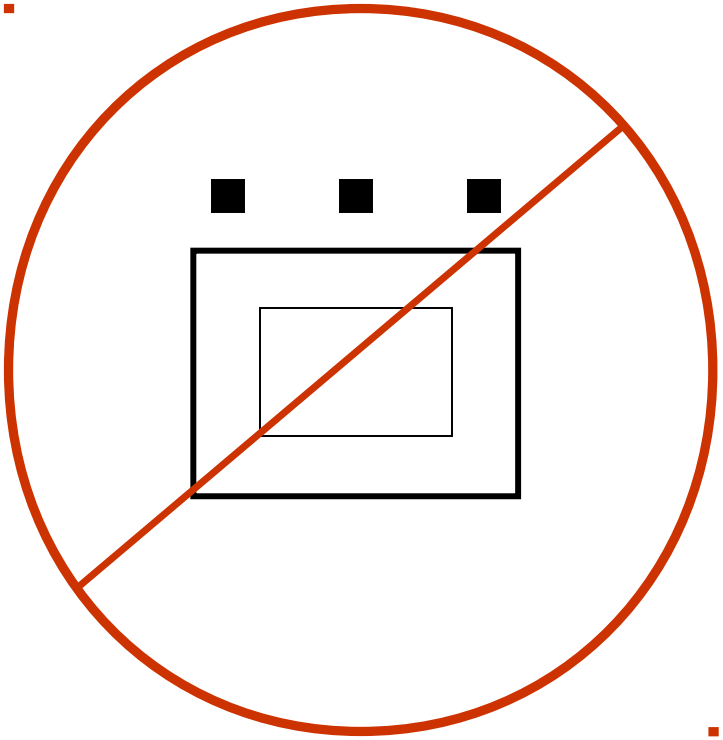
N = angle T is less than or
equal to 800 mils

CAPABILITY ICONS

Y = Option requires coordi

N = No coordination requir

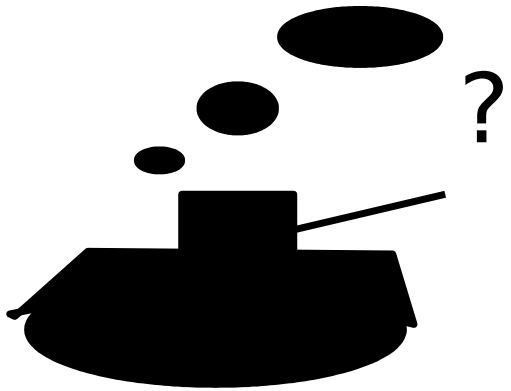
CAPABILITY ICONS



Y = the unit is *not* restricted.

N = the unit is restricted.

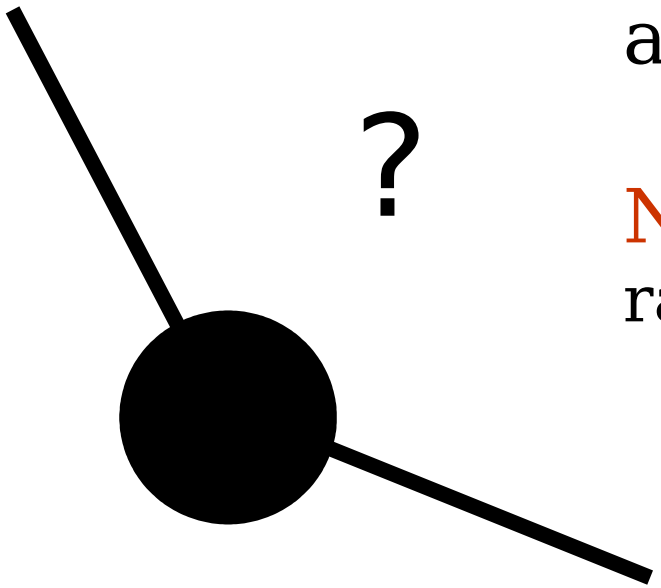
CAPABILITY ICONS



Y = desired effects can be achieved.

N = desired effects cannot be achieved

CAPABILITY ICONS



Y = FS system is appropriate for the mission

N = At least one gun is out of range.

Incorrect values in MET

Duplicate lots for Ammo

Mask data incorrect.

MVV data stored with same lot for different powder types

VIEW OTF/FO

- Click 1 on **<OTF/FO>**
- Shows Fire Order information that was input by the operator or generated by the AFATDS.
- Munitions and Quantity can be changed.
- Select **<Cancel>**

CANNON TECH SOLUTION

- Click 1 on the **Cannon Tech Solution** Tab.
- Shows firing data that will be sent to the howitzers, as well as Time of Flight (TOF) **31** and Max Ordinate (AGL) **1230**.

  #1, WR, 1 Rd, HE/PD, DF 3355, QE 407
- To proceed by voice we must open the GDU Weapon Status window.
- On the AFATDS Current Menu Bar Click 1 on **GDU STATUS ICON** (9th icon from the right)

GDU STATUS WINDOW

- This shows the status of your weapons.
- From here you can ring the howitzers if connected digitally. Once a mission is acted upon you may also send fire commands and end of mission, as well as shot, splash , and rounds complete to the observer.
- <u>This window should always remain open or be minimized when processing fire missions</u>.
- Click 1 in the upper right corner of the window to minimize.

- Click 1 on the **Aimpoints** Tab.

- This window show the actual grid that each weapon will be aiming at to achieve the desired sheaf.

GRID MISSION Cont'd

- This will result in two medium level alerts.
  - GDU Message, Transmission Failed
  - MTO Message, Transmission Failed
- **DO NOT DELETE THESE ALERTS!!**
- Click 1 on the minimized **GDU Weapons Status** at the bottom of the screen
  - Shows Mission status of the GDU's

SUBSEQUENT CORRECTIONS

- In order to apply subsequent corrections:
- Click 1 on the **Target Workspace Icon**

- Click 1 on the Target to highlight it and Click 3
- Select **Adjust**
- The Adjust window is opened

SUBSEQUENT CORRECTIONS

- The Following correction is received:
  - **Direction 5500, Left 100, Drop 100, FFE**
- To Apply this correction:
  - Mission Type: **Fire For Effect**
  - Azimuth: **Observer-Target, 5500 Mils**
  - Deviation Correction: **Left 100**
  - Range Correction: **Drop 100**
- **<OK>,** A new IP will be generated.
- Click 1 on the **IP** ar
- Open the GDU Weapons Status window, highlight the target and click 1 on **<Fire Commands>,** the new firing data is displayed.

SUBSEQUENT CORRECTIONS

- **RESULTS:**

  #1, 3rds, HE/VT Ti 30.0, DF 3365 QE 401

  #2, 3rds, HE/VT Ti 30.0, DF 3366 QE 400

  #3, 3rds, HE/VT Ti 30.0, DF 3368 QE 399

  #4, 3rds, HE/VT Ti 30.0, DF 3371 QE 398

  #5, 3rds, HE/VT Ti 30.0, DF 3374 QE 398

  #6, 3rds, HE/VT Ti 30.0, DF 3376 QE 399

- Click 1 on the target symbol on the map, right click and select **Status**.

  Action – receive or transmit

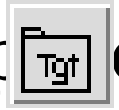
  Unit – that received or transmitted the message

  Type – what the message was.

  Refresh Shows updates that have been received since the window was opened.

  Request Status Queries a selected units target status

  Trace Queries the status from every unit involved in the mission.

- Normally the observer will end the fire mission, however if communication is lost we can end the mission.
- Open the Target worksp 

e

  The active targets are displayed, highlight the target, right click and select **End of Mission…**

  Enter any disposition and causalities.

cord as Target - if desired

  To enter refinements select **Options.**

<OK> Note: If the mission originated at another AFATDS a Mission Fired Report (MFR) must be entered to end the mission.

STANDARDIZING THE FIRE ORDER

- Just as in Manual Mission Processing we can standardize all or some of the Fire Order. This will speed up the mission processing time by utilizing the Guidance's that we have input..
- The FDO may decide to allow the AFATDS to create its own fire order, thus making all or some of the Fire Order Standards: **AFATDS SELECT**
- Standardizing the Fire Order will be based on the individual units Standing Operating Procedures (SOP). **For classroom purposes** we will make all Fire Order Standards: **AFATDS SELECT**

POLAR MISSON

ADJUST FIRE POLAR

- **CALL FOR FIRE:** A or B de FO24 AF Polar, Dir 4900, Dist 5000, Up 100, 3 T72 Tanks, ICM I/E

- **Mission Processing> Initiate Fire Mission**

ADJUST FIRE POLAR

CALL FOR FIRE: A or B de FO24 AF Polar, Dir 4900, Dist 5200, Up 100, 3 T72 Tanks, ICM I/E

- OBSERVER, Select **FO24 Co E 2nd Bn, 2nd Marines**
- Click 1 on the **[POLAR/LASER] TAB**
- ENTER:
  - Direction: **4900**
  - Distance: **5200**
  - Vertical Shift: **UP 100**
  - **<APPLY>**

ADJUST FIRE POLAR

CALL FOR FIRE: A or B de FO24 AF Polar, Dir 4900, Dist 5200, Up 100, 3 T72 Tanks, ICM I/E

- Grid is now filled in with **67726 15639 1350**
- Mission Type: **Adjust Fire**
- Category: **Maneuver**
- Type: **Tank Medium**
- Strength: **3**

ADJUST FIRE POLAR

- Click 1 on **IP ICON**
- Results:
  - **GREEN OPTION for FA Cannon**
  - Gun #2 adjusting with HE/PD, Chg 5 GB, DF 3156, QE 468, 3Rds HE/VT I/E

- WHY DID IT CHOOSE THIS??
  - Open the **Guidance Workspace** and select **Cannon Attack Methods**, Target Category - **Maneuver**

<Accept Recommendation>

ADJUST FIRE POLAR

- **SUBSEQUENT CORRECTIONS:**

  Right 200, Add 200, FFE

To Apply this correction: On the map highlight the target and right click to select **Adjust** or highlight the target in the active target list and right click to select **Adjust…**

  - Mission Type: **Fire For Effect**
  - Azimuth: **Observer-Target, 4900 Mils** from CFF
  - Deviation Correction: **Right 200**
  - Range Correction: **Add 200**

- **<OK>** the fire order is transmitted to the firing unit.

SUBSEQUENT CORRECTIONS

- **RESULTS:**
  - **#1, 3rds, HE/VT Ti 23.0, DF 3157 QE 433**
  - **#2, 3rds, HE/VT Ti 23.0, DF 3157 QE 432**
  - **#3, 3rds, HE/VT Ti 23.0, DF 3160 QE 430**
  - **#4, 3rds, HE/VT Ti 23.0, DF 3164 QE 429**
  - **#5, 3rds, HE/VT Ti 23.0, DF 3168 QE 429**
  - **#6, 3rds, HE/VT Ti 23.0, DF 3171 QE 429**

EOM RECORD AS TARGET

Target Neutralized, Est. 10 Cas, Record as Target, End of Mission

- To record a fire mission as a target:
  - Click 1 on the **Target Workspace Icon**
  - **Highlight the Target**, and **Target> Target Actions> End of Mission** or right click to select **End of Mission**
  - Any **Disposition and Casualties are recorded** and the **Record as Target Button is toggled**

    <OK>
- Target is now in the **On-Call Target List**, Process the MFR and Delete all Medium Level Alerts.

SHIFT MISSION

ADJUST FIRE SHIFT

- Shift Missions are conducted from a previously stored Target or Known Point.
- The following Call For Fire is received:

  A or B de FO24, AF Shift from Target # AA (BB) 0001, Dir 4800, Left 500, Add 500, Bn Command Post, 500 M Radius, TI I/E

- **Mission Processing> Initiate Fire Mission**

ADJUST FIRE SHIFT

Call For Fire: A or B de FO24, AF Shift from Target # AA (BB) 1001, Dir 4800, Left 500, Add 500, Bn Command Post, 500 M Radius, TI I/E

- Observer, Select **FO24, CO E, 2nd Bn, 2nd Marines**
- Select the [**Shift] TAB**
  - Target Number: **AA(BB) 0001**
  - Obs-Tgt Direction: **4800**
  - Lateral Shift: **Left 500**
  - Range Shift: **Add 500**

  <Apply> Grid Generated **67047 15358 1350**

ADJUST FIRE SHIFT

Call For Fire: 1/2 or 2/2 de FO24, AF Shift from Target # AA (BB) 1001, Dir 4800, Left 500, Add 500, Bn Command Post, 500 M Radius, TI I/E

- Category: **C3**
- Type: **CP, Battalion** (default)
- Shape: **Circular**
- Radius: **500**
- **<Analyze Target>**
- Click 1 on the **IP ICON**
- Results: #3 1Rd HE/PD, Chg 5GB, DF 3268, QE 426, TOF 24, Btry 2Rds HE/PD I/E

ADJUST FIRE SHIFT

- **SUBSEQUENT CORRECTIONS:**
  Left 200, Add 100, AMC, FFE
  Subsequent Corrections are processed the same as previously discussed. ***Direction*** *will be the same as the initial Call for Fire(Target Workspace Icon, highlight the Target, and Adjust)*

SUBSEQUENT CORRECTIONS

- **RESULTS:**

  #1, AMC 2rds, HE/PD DF 3296 QE 439
  #2, AMC 2rds, HE/PD DF 3265 QE 430
  #3, AMC 2rds, HE/PD DF 3266 QE 414
  #4, AMC 2rds, HE/PD DF 3303 QE 406
  #5, AMC 2rds, HE/PD DF 3340 QE 413
  #6, AMC 2rds, HE/PD DF 3340 QE 428

  On the GDU Status Window Click 1 on **EOM**

FIRE FOR EFFECT MISSIONS

PROCESS A FFE ON AN ESTABLISHED TARGET

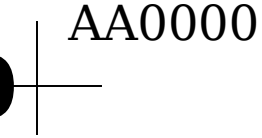
- Fire For Effect Missions are processed the same as Adjust Fire Missions. We will cover only one Fire For Effect Mission
- Targets that have already been processed may be reinitiated at any time. There are **two methods** to accomplish this:

PROCESS A FFE ON AN ESTABLISHED TARGET

- Open the **Targets Workspace,** Double Click on **Current** and the desired Target List, Highlight the target you wish to fire, right click and select **Initiate Fire Mission (*DO NOT DO THIS AT THIS TIME !!)***

- On the **Map Click 1 on the target you wish to shoot**, **Click 3 and release on Initiate Fire mission.** ***(We will use this 2nd method)***

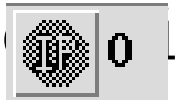
PROCESS A FFE ON AN ESTABLISHED TARGET



- Click 1 on **AA or BB0000**
- Click 3 and release on **Initiate Fire Mission** (The Initiate Fire Mission Window opens)
- Send Select the adjacent FDC and **<OK>**

RECEIVE A DIGITAL FIRE MISSION

- At the Receiving FDC the IP ICON Darkens

- At the Re  ng FDC Click 1 on the **IP ICON**

RECEIVE A DIGITAL FIRE MISSION

- At the Receiving FDC Click 1 on the **IP ICON**
- Results: **Battery 3, HE/VT**
- Deny this mission.

Check Firing!

- Check firing can be initiated by any station.
  - When initiated on a target only those stations involved in that mission will receive the message.
  - When initiated on all targets the message is sent to all command and supported units
- When the message is received a information message will display. **<OK>** the message and check firing will appear in the AFATDS current bar.
- To initiate Select **Check firing** input data **<OK>**

Cancel Check Firing

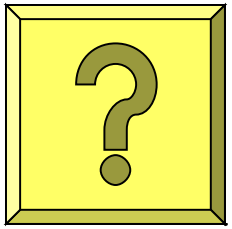
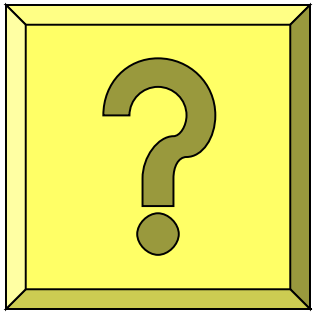
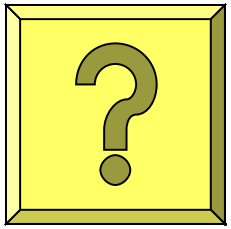
- Cancel Check Firing can also be initiated by any station.
- The command will be transmitted to all commanded and supporting units.
- An informational message will display **<OK>.**

Denied Missions

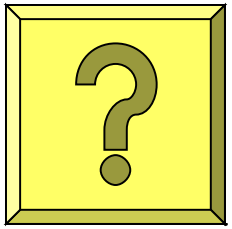
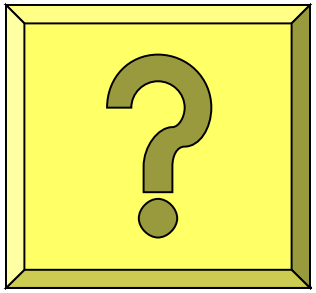
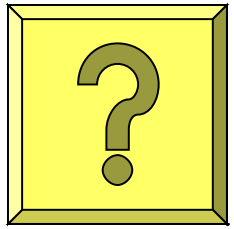
- If the mission was received from an observer or AFATDS.
  - The intervention window close and a denied MTO is transmitted.
  - For an AFATDS the mission will be placed in the Denied Icon for that station to take action.
  - If the mission was initiated from the keyboard or Radar, the Denied Icon becomes active and increments.
- Select the Deny Icon And **<OK>**
- To recompute select **<Reprocess>**

CHARGE PREFERENCE

- For training purposes you can select a preferred charge and trajectory to be used by FA cannon.
- Navigation
  - Select **Mission Processing> Preferences**
  - Input desired data in the **Cannon Technical FD Preferences**

QUESTIONS

SUMMARY

- Processed Adjust Fire missions using the Grid, Shift, and Polar Methods.
- Processed Fire or Effect fire missions using the Grid, Shift, and Polar Methods.
- Examined the Intervention Point Window.
  - Tac Solution Tab
  - Attack Options Tab
  - Cannon Tech Solution
  - Aimpoints
- Examined the Target Status window.
- Initiated and Cancelled Check Firing.